

Appendix S. Offsetting Currently Excess, New or Increased Loadings of Nitrogen, Phosphorus and Sediment to the Chesapeake Bay Watershed

As an assumption of the Chesapeake Bay TMDL, EPA expects Chesapeake Bay jurisdictions to account for and manage currently excess, new or increased loadings of nitrogen, phosphorus, and sediment. Such loadings are now or might be introduced by point and nonpoint sources as a result of current land use or future growth and development and land use changes.

As explained in Section 10.1, where the TMDL does not provide a specific allocation to accommodate currently excess, new or increased loadings of nitrogen, phosphorus, or sediment, a jurisdiction may only accommodate such currently excess, new or increased loadings through a trading mechanism allowing for quantifiable and accountable Offset and Uplift offsets credits of the currently excess, new or increased load in an amount necessary to implement the TMDL and applicable WQS in the Chesapeake Bay and its tidal tributaries. Therefore, the Chesapeake Bay TMDL assumes and EPA expects the jurisdictions to accommodate any currently excess, new or increased loadings of nitrogen, phosphorus, or sediment that do not have a specific allocation in the TMDL with appropriate Credits offsets supported by credible and transparent trading offset programs subject to EPA and independent oversight. This appendix provides details of common elements on which EPA expects the jurisdictions to develop and implement those trading offset programs.

II. Definitions

The terms used in this appendix are to be interpreted consistently with the above-listed source documents, unless specifically defined below.

1. Offset, Offset credit. For purposes of the Chesapeake Bay TMDL, means (n.) a reduction in the loading of a pollutant of concern from a source or sources that is used to compensate for the loading of the pollutant of concern from a different point or nonpoint source in a manner consistent with meeting WQS; or (v.) compensating for the loading of a pollutant of concern from a point or nonpoint source with a reduction in the loading from a different source or sources, in a manner consistent with meeting WQS.

2. Credit. For purposes of the Chesapeake Bay TMDL, means a measured unit of nitrogen, phosphorus, or sediment pollutant reduction per unit of time, consistent with Phase 5.3 Chesapeake Bay Watershed Model and future revisions to the Model, at a location designated and standardized by the jurisdiction that can be generated, sold, or traded as part of either a designated Offset credit or as a designated an offset Environmental Uplift credit.

3. Offsets Baseline. For purposes of the Chesapeake Bay TMDL, means the amount of pollutant loading allowed by wasteload allocation (WLA) or load allocation (LA) that applies to individual credit generators in the absence of offsets. Sources generating credits are expected to first achieve their applicable offset baselines before credits may be generated.

1. Environmental Uplift, Uplift credit: For purposes of the Chesapeake Bay TMDL means the additional amount of pollutant loading remediated from watershed allocation (WLA)

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or load allocation (LA) by a point source or nonpoint source through the creation and sale of a qualifying Credit designated as an Environmental Uplift credit.

4. *New or Increased Loading* of nitrogen, phosphorus or sediment. For purposes of the Chesapeake Bay TMDL means, for a point or nonpoint sources meeting its Chesapeake Bay TMDL WLA or LA as of the date of establishment or modification of the Chesapeake Bay TMDL, any nitrogen, phosphorus, or sediment loading from the point or nonpoint source in an amount greater than reflected by WLAs or LAs in the Chesapeake Bay TMDL; for a point or nonpoint sources not meeting its Chesapeake Bay TMDL WLA or LA as of the date of establishment or modification of the Chesapeake Bay TMDL, any nitrogen, phosphorus, or sediment loading from the point or nonpoint source in an amount greater than reflected by WLAs or LAs in the Chesapeake Bay TMDL, *after the point in time the source begins meeting its WLA or LA.*

III. Common Elements

As an assumption of the Chesapeake Bay TMDL, EPA expects that ~~currently exceeding, new or increased new or increased~~ loadings of nitrogen, phosphorus, and sediment in the Bay watershed that are not specifically accounted for in the TMDL's WLA or LA will be offset by loading reductions from other sources and that any such ~~Offset~~ ~~credits~~ and Uplift credits will be generated under programs that are consistent with the common elements described below. These common elements are important to ensure that offsets are achieved through reliable pollution controls and that the goals of the Bay TMDL are met. EPA recognizes the value of ~~trading offset~~ programs that are consistent among the jurisdictions in order to support broader regional implementation. (Note: This last sentence is critical to achieving consistent and rational market integrity, efficiency, and replicability across the Jurisdictions).

1. Authority. That legal authority exists to authorize the ~~currently excess~~ new or increased loading of nitrogen, phosphorus, and sediment on the basis of offsetting reductions (Offset credits) coupled with Environmental Uplift (Uplift credits) from another point or nonpoint source and to implement, monitor, and enforce such ~~offsets~~ Offset credit and Environmental Uplift credit trading.

2. ~~Offsets Baseline (for credit generators). That any point or nonpoint source generating a credit has implemented practices or met any reductions necessary to be consistent with the Chesapeake Bay TMDL allocations.~~ Environmental Uplift, Uplift credit. For purposes of the Chesapeake Bay TMDL means the additional amount of pollutant loading remediated from watershed allocation (WLA) or load allocation (LA) by a point source or nonpoint source through the creation and sale of a qualifying credit designated as an Environmental Uplift credit.

(a) For point sources generating Environmental Uplift credits, the TMDL assumes that ~~first the point source will be required to achieve the offsets baseline is the~~ WQBEL included in that discharger's permit consistent with the applicable WLA in the TMDL. For some point ~~sources, that~~ sources, that will be a numeric limitation; for others, it will be a suite of BMPs determined to be protective of WQS.

~~(b) For nonpoint sources generating credits, baseline options should be appropriately defined in terms of load, geographic scale, minimum practices, schedule of implementation and/or time needed to facilitate improved environmental compliance with WQS.~~

(b) For nonpoint sources generating Environmental Uplift credits the TMDL assumes that one Offset credit will be generated and sold for every Environmental Uplift credit generated and sold.

3. Minimum Controls (for Credits users). That any point or nonpoint source using a Credit has implemented certain minimum controls:

(a) For point sources using Credits, that the discharger using a Credit will meet on-site any relevant minimum technology-based standards or secondary treatment standards.

(b) For nonpoint sources using Credits, that the source has met all federal, state, and local requirements, applicable to nonpoint sources.

4. Eligibility. Inclusion in the basis and record for any Offset credit and/or Environmental Uplift credit, any other criteria that the jurisdiction will use to determine when a point source or nonpoint source may generate Credits. Inclusion of a statement of eligibility of aggregators or third parties in generation, sale and purchase of offsets on behalf of others.

5. Credit Calculation and Verification: Ensuring that Credits are quantified using appropriate metrics consistent with Phase 5.3 Chesapeake Bay Watershed Model and future revisions to the Model and are in situ verified over time to ensure that they are producing the expected reductions, including

(a) Appropriately quantifying pollutant loading Credits generated for both Offset and Environmental Uplift and ensuring that offsets Credits acquired reflect load reductions equivalent to or greater than the Offset or Environmental Uplift new or increased loadings being offset or improved, including:

i. Accounting for the equivalency of pollutants to compensate for changes in pollutant form, e.g., total nitrogen versus dissolved nitrogen;

ii. Accounting for uncertainty of source reductions due to factors such as practice efficiencies related to the use of BMPs, a lack of required monitoring or reporting compared to other sources, and/or the lack of regulation of the source by federal, state and/or local regulations;

iii. Accounting for any distance between the generating and acquiring sources that could affect water quality including the potential for water chemistry variations and other delivery factors that may cause pollutant attenuation;

iv. Accounting rules for inclusion of practices implemented through public cost-share incentives; and (Note: consistent with current USDA policy, implementation costs of Farm Bill Conservation Programs should be allowed in Credit generation in order to keep the costs of Credits as low as possible to encourage market development and achievement of WQS as soon as possible; however annual rental payments should be excluded and subtracted from any sale price to avoid double dipping).

v. Accounting for the possible degradation in the effectiveness of a practice over the projected term of the practice.

(b) Validating that proposed activities to create reductions (e.g., treatment or BMP installation) are expected to generate the Credits offered for Offsets or Uplift, including identifying the metrics and data used to quantify the offset/Credit generated and the period for Credits consistent with Phase 5.3 Chesapeake Bay Watershed Model and future revisions to the Model.

- (c) Verifying that the Credit was and continues to be generated, via monitoring, inspection, reporting, or some other mechanism, including articulating the frequency of on-site or other monitoring and who will conduct monitoring or inspections.
 - (d) Articulating whether third parties may verify and certify Credits and offsets within and between jurisdictions.
6. Safeguards. Inclusion in the basis and record for any Credit offset, safeguards to ensure that the entire delivered load is accounted for and that water quality will be protected, such as:
- (a) Prohibiting the use of Credits offsets where such use would cause or contribute to exceedances of WQS, TMDLs, WLAs or LAs in affected receiving waters, locally or elsewhere;
 - (b) Restricting the use or generation of Credits offsets by an unpermitted point source or a source that is not in compliance with its NPDES permit or a jurisdiction equivalent, or other federal or state law or regulation;
 - (c) Protecting affected communities from disproportionate harm arising from Credit trades offsets; and
 - (d) Ensuring temporal consistency between the period when a Credit or offset is generated and when it is used.
7. Certification and Enforceability. Designating the process to be used and the institutional entity responsible for Credit offset trading program operation and certification, and ensuring the enforceability of Clean Water Act discharge permits and offset transactions, including:
- (a) Requiring that any Credits offsets, along with the enforceable water quality-based effluent limits (WQBELs) based on the applicable WLA (e.g., zero for new dischargers), will be included and recorded in the NPDES permit.
 - (b) Estimating annually the increased pollutant loading from nonpoint sources and discharges from point sources that will not be permitted, acquiring Credits offsets needed to fully offset ~~such increases~~ increases, acquiring Uplift credits and and recording these Credits offsets in an appropriate registry instrument.
 - (c) Determining whether Credit offsets may occur without reopening or modifying a NPDES permit to incorporate the Credit offset transaction.
 - (d) Ensuring that transactions can be enforced by the jurisdiction or otherwise insured by the jurisdiction or Credit generator, for example through a credit reserve insurance account, in the event of failure by the Credit offset generator.
 - (e) Determining whether a civilly enforceable agreement exists between a Credit n offset generator and ana Credit offset user/buyer.
 - (f) Ensuring that an NPDES permittee remains accountable for meeting the WQBEL(s) in its permit.

8. Accountability and Tracking. Developing accountability and tracking system(s) that are holistic and focused on performance outcomes while providing maximum transparency, operational efficiency, and ~~accessibility~~accessibility to all interested parties. Such system(s) should demonstrate:

- (a) An appropriate ~~offset baseline~~ in situ measurable (consistent with Phase 5.3 Chesapeake Bay Watershed Model or its revisions) practice or technology is used to generate Credits.
- (b) The practice or technology offset generating a measurable Credit is quantified and verified according to standards established by the jurisdiction and consistent with Phase 5.3 Chesapeake Bay Watershed Model or its revisions.
- (c) The ~~offset or~~ Credit is sold only once during the term of the eCredit.
- (d) ~~The~~ There is nutrient delivery and remediation equivalency represented by ~~of~~ the Credit offset generated and the offset consumed both in terms of the delivered and remediated load equivalency of pollutants and appropriate attenuation.
- (e) The locations(s) of the Credit offset, including where the ~~offset or~~ Credit is generated.
- (f) Authentication of ownership.
- (g) The NPDES permit number or other identification of the purchaser of the ~~offset or~~ Credit.
- (h) Documentation of agreements between parties to the ~~offset~~ transaction.
- (i) Whether sufficient Credits offsets will be acquired over the period of the new or increased loading.
- (j) Compliance status of NPDES parties.
- (k) The results of monitoring and verification for each Credit offset.
- (l) Time frames for regular review and evaluation of the Trading offset program.

9. Nutrient-impaired Segments. In addition to the safeguards in 6 above, ensuring that Credits offsets generated and transacted in nutrient-impaired water segments:

- (a) Result in progress toward attainment of WQS in the impaired segment;
- (b) Do not ultimately result in exceedances of WQS in the purchaser's impaired segment; and
- (c) Do not increase delivery loads in downstream impaired segments, do not violate WQS in any intermediary segments, and do not violate local WQS once achieved.

10. Credit Banking. The role of third parties in aggregation of Credits and operation of ~~credit~~ banks should be specified. It is recommended that credit banking on a basin or interstate basis be authorized subject to meeting the elements noted above. Expectations concerning the necessary costs and reasonable expenses of banks that acquire and sell Credits should be described.

EPA expects that the Chesapeake Bay jurisdictions also can use the additional offset trading program features discussed in Section 10.1.3 to build their offset trading programs for new or increased loadings of nitrogen, phosphorus, and sediment. Those include Environmental Uplift ~~net~~ improvement offsets, aggregated programmatic credits, and a reserve-tradeoffset hybrid.

In developing and implementing their offset trading programs, EPA encourages jurisdictions to consult with EPA to facilitate alignment with the Clean Water Act and the Chesapeake Bay TMDL. EPA intends to fulfill its various oversight responsibilities of these offset trading programs by conducting periodic audits and evaluations as detailed in Section 10.1.4. Where questions or concerns arise, EPA will use its oversight authorities to ensure that Credits offsets and offset trading programs are fully consistent with the Clean Water Act and its implementing regulations.